

cated the resolutions to all countries which had not been represented, and nearly all the replies which have been received are favourable. Maps in exact accordance with the resolutions are, it is understood, being produced by France, Hungary, Italy, Spain, the United States, and other countries, and, so far as we are concerned, by the General Staff and the Ordnance Survey. These maps will be shown at the International Geographical Congress which meets at Rome in October next.

I have now come to the end of this rapid sketch of the geographical work of the official world. It is work which, though often of an apparently humdrum character, outweighs in importance the sum total of all which can be undertaken by private agency or by societies. But it is the very legitimate business of societies to criticise and encourage.

It is, in fact, not only our manifest duty to encourage the systematic mapping of the world on which we live, but we should do all we can to ensure the perfection, and suitability for their special purposes, of the maps themselves. In the surveying of the earth's surface and its representation by means of maps we are treating of matters which are essentially and peculiarly our own.

It would appear that another great function of Geography, as represented by Geographical societies and congresses, is to serve as a popularising medium for such sciences as geodesy, geology, climatology, and anthropology, and also to serve as the means of bringing together the workers in these sciences. We may be told that, so far as this Association is concerned, the exact study of geodesy and meteorology is dealt with by Section A, geology by Section C, and anthropology by Section H, but there is, I believe, no other section which forms a more convenient general meeting-ground for all the workers in the various divisions of earth-knowledge. We ourselves have our own special work, work which is shared by no others, the great task of mapping the world. This task is such a necessary one, and it is of such genuine value to so many studies, that by assisting in it we are really furthering the Advancement of Science, which is the object of this great Association.

NOTES.

COLONEL C. F. CLOSE, C.M.G., R.E., has been appointed Director-General of the Ordnance Survey in succession to Colonel S. C. N. Grant, C.M.G., R.E.

DR. F. GRANT OGILVIE, C.B., has been appointed by the President of the Board of Education director of the Science Museum. He will continue to fill his present position of secretary for the Science Museum and the Geological Survey and Museum.

THE memory of Alessandro Volta was honoured on Friday last by a meeting held at his grave at Camnago, at which were present Signor Calissano, Minister of Posts and Telegraphs, M. Buebs, director of the Belgian telegraphs, Signor Pietro Volta (a nephew of the inventor), and many telegraphists from all parts of the world. Several speeches were delivered, and a memorial stone bearing an inscription recording the esteem in which Volta is held was inaugurated. The ceremony was followed by a luncheon, provided by the Mayor, and the placing of wreaths, at Como, on the Volta monument.

THE Brussels correspondent of *The Times* announces the death of Prof. F. Swarts, the holder for many years of the chair of general chemistry at the University of Ghent.

THE death is announced, at the age of sixty-four years, of Mr. T. Hurry Riches, locomotive superintendent of the Taff Vale Railway. Mr. Riches, who was held in high esteem as an engineer, for three successive years filled the presidency of the South Wales Institute of Engineers. He was also an ex-president of the Institute of Mechanical Engineers, a member of the Iron and Steel Institute, of the British Association, of the council of the University

College of South Wales and Monmouthshire, of the council of governors of the Imperial College of Science and Technology, of the council of the Institute of Metals, and a governor of the National Museum of Wales. He served as chairman of the mechanical engineering section of the Franco-British Exhibition, and as reporter for Great Britain and the colonies to the International Railway Congress of 1910 upon railway motor-cars.

DR. GILMAN A. DREW, assistant director of the Woods Hole Marine Biological Laboratory, has been appointed resident assistant director of the laboratory, and will in future devote his whole time to the work at Woods Hole.

IT is announced in *Science* that Prof. A. J. Hitchcock, of the United States Department of Agriculture, has left for Panama to join the Smithsonian expedition for the biological survey of the Panama Canal zone. He will also investigate the grasses of the five Central American Republics on behalf of the department with which he is connected.

ACCORDING to advices received at Cordova, Alaska, the Smithsonian Institution's glacial expedition has had an unlucky accident. As Profs. R. F. Starr and Lawrence Madden were crossing the Yukon on their way to Fairbanks, their wagon was upset by the current. The explorers themselves got ashore in safety, but all their field notes, cameras, and exposed films were lost.

The Electrician, quoting from the French official gazette "L'Officiel," states that a committee dealing with the hygienic aspects of illumination has been appointed by the Minister of the Interior in France. The objects of the committee include the general effects of illumination on health, the framing of simple rules as to the best means of applying customary systems of lighting to various industrial operations, the nature and causes of short sight and impairment of vision, and their connection with defective living conditions, the study of methods of measuring illumination, &c.

A BRUSSELS correspondent of *The Times* states that a special commission was recently appointed to study the utilisation of aeroplanes for ensuring rapid communication with districts of the Belgian Congo that are still unprovided with railways and roads, and that it has been decided to await the results of certain tests to be carried out in France. Attempts will be made to traverse a desert about 1200 kilometres (750 miles) across, and to establish landing stations 400 kilometres apart, fitted with wireless telegraphy. The aeroplanes will have to convey three passengers and a relatively heavy load of victuals, water, tools, &c. It is hoped that this line will be established in 1912. A first subsidy of 16,000*l.* has been voted for the establishment of these communications.

ACCORDING to a Reuter telegram, the acting Russian Consul at Kwang-cheng-tse reports the outbreak at Changchun, Manchuria, of an unknown disease. The sufferers are attacked by headache and violent diarrhoea, and lose the power of speech. Death occurs in two or three days. The Chinese and Japanese doctors are, it is said, doubtful of the nature of the disease.

THE Board of Agriculture and Fisheries has decided to appoint a departmental committee to inquire into the circumstances of the recent outbreaks of foot-and-mouth disease, and to consider whether any further measures can be adopted to prevent their recurrence. The committee will be appointed and sit in the autumn under the chairmanship of Sir Ailwyn Fellows.

THE fifty-second course of lectures and demonstrations for sanitary inspectors, held under the auspices of the Royal Sanitary Institute, will begin on Monday, September 18, and close on Friday, December 1. The course will be divided into two parts. The first part will consist of six lectures dealing with elementary physics and chemistry in relation to water, soil, air, ventilation, and meteorology. The second part will deal with meat and food inspection, including the taking of samples of water, food, and drugs for analysis. On October 6 a course of lectures to assist school teachers and other students entering for examinations in hygiene in its bearing in school life, and for women health visitors and school nurses, will be held at the Royal Sanitary Institute and Parkes Museum. A course of practical training for meat inspectors will be begun on October 13.

At the National Congress of Applied Chemistry, which is to be held at Turin from September 23 to 28, a general discussion will take place on the fiscal and customs practice in regard to the industrial use of alcohol, and Prof. Miolati will give an experimental demonstration of the use of atmospheric nitrogen for industrial purposes.

A FUNGUS FORAY in connection with the Yorkshire Naturalists' Union is arranged to take place in Mulgrave Woods, Sandsend, near Whitby, from Saturday, September 23, to Thursday, September 28. The following papers and lecture will be delivered:—on September 23, notes on the Uredinaceæ, by Mr. R. H. Philip; fungi found in sewage-polluted West Riding streams, and in other places, by Mr. J. W. H. Johnson; and on September 25 Mr. George Massee will lecture on "Diseases of Plants caused by Fungi."

THE annual Fungus Foray of the South-Eastern Union of Scientific Societies will be held at Hastings on Saturday, September 30. The gathering will be preceded, on September 29, by the delivery (at the Museum, Hastings) of a popular lecture on "Fungi," by Mr. E. W. Swanton. Those intending to take part in the foray are requested to give intimation to this effect, by September 27, to Mr. G. Abbott, 2 Rusthall Park, Tunbridge Wells.

ADDRESSES will be delivered as follows at the reopening of certain of the London medical schools:—St. George's Hospital, on October 2, by Dr. H. A. Miers, F.R.S., on "Lucidity"; Middlesex Hospital, on October 2, by Dr. C. Berkeley; University College Hospital, on October 2, by Sir William Ramsay, K.C.B., F.R.S.; London (Royal Free Hospital) School of Medicine for Women, on October 2, by Sir William Butlin; London Hospital, on October 3, the "Schorstein" lecture by Dr. J. Mackenzie, and on October 4 a further lecture will be delivered on the subject of "Auricular Fibrillation."

THE Meteorological Office in its recent issue of the Weekly Weather Report gives a summary of the weather for the summer, comprised by the thirteen weeks from June 4 to September 2. The mean temperature for the period was above the average over the entire kingdom, the excess ranging from about 4° in the east of England to rather more than a degree in the north of Scotland. The extreme temperature exceeded 90° in all the English districts, and was as high as 98° in the Midlands and 97° in the east of England. The rainfall was deficient over the entire country, except in the north of Scotland, where the excess was only 0.05 inch. The largest deficiency was 3.16 inches in the south-east of England and 3.00 inches in the south-west of England. The aggregate measurement of rain ranged from 3.34 inches in the

south-east of England to 10.62 inches in the north of Scotland. The number of rainy days was everywhere deficient, the greatest deficiency being 19, in the Channel Islands. The duration of bright sunshine was everywhere largely in excess of the average, the greatest excess being 225 hours in the south-east of England. The absolute duration ranged from 476 hours in the north of Scotland to 861 hours in the Channel Islands, and 838 hours in the south-east of England. At Greenwich the mean temperature for the summer, June to August inclusive, is 66.1° , which is 3.8° above the normal. The mean for the respective months was: June, 60.8° ; July, 68.3° ; August, 69.1° , the excess in the last-mentioned month being 6.2° . The August mean is fully 2° higher than any previous record for the corresponding month. The mean of the maxima readings is 81.1° , and there is no previous record of the mean exceeding 80° . There have already been 40 days this summer (April 2 to September 5) with the shade temperature above 80° , and in the last seventy years 1868 is the only year with an equal number of hot days, whilst 1846, 1857, and 1859 are the only other years with more than 30 such warm days. The shade temperature of 100° at Greenwich on August 9 establishes a record for absolute temperature. The aggregate rainfall at Greenwich for the three summer months is 3.74 inches, which is 2.80 inches less than the average; the driest month was July, with 0.26 inch. The rainfall this summer is the least since 1885, and 1869, 1864, and 1849 are the only other years since 1841 with so small a summer rainfall. The duration of bright sunshine for the three months is 818 hours, which is 175 hours more than usual; the respective amounts are: June, 223 hours; July, 335 hours; August, 260 hours.

PROF. W. BOYD DAWKINS, F.R.S., delivered his presidential address to the Cambrian Archæological Association at Abergele on August 29, taking as his subject "Some Points in the Pre-history of Wales." In the course of his remarks, he said that at the time when the Neolithic aborigines first found their way so far west in the British Islands, the whole land was covered with forest, the lower portions of the valleys were filled with morasses, and the only tracks were those of the wild animals. The land was some 60 feet above its present level, and the coastline included the area of Anglesea. The Neolithic farmers and herdsmen were a small, oval-headed people, well formed, and had been clearly proved to be identical with the Iberian peoples of history. They were represented to-day by the small, dark element in the Welsh population. The next elements in the Welsh population were the taller, broad-headed people who lived in Wales in the Bronze age. Their civilisation was derived from the Continent, and they were identified with the earlier division of the Celtic peoples, the Goidels, termed by Rhys the Q Celts. In the prehistoric Iron age a new civilisation made its appearance. That, too, was probably introduced by invading tribes from the Continent, and these belonged to the Brythons, or P Celts, of Rhys. These represented the third element, and no new traceable element was added by the Roman occupation.

THE Bulletins of the Johns Hopkins Hospital for July and August (xxii., Nos. 244 and 246) contain matter of much medical interest. In No. 246 Dr. S. A. Knopf describes, under the name of "the starnook," a device for open-air treatment. It consists of a small room or chamber, sufficiently large to contain a small bed, built of wood or galvanised iron on a balcony, or against a window and supported on posts. The walls are louvered, and partly consist of shutters which can be opened, and

the roof also can be raised and entirely opened in fine weather. The idea is that it may be used in towns and cities where there is no ground attached to the dwelling available for the erection of an ordinary "shelter."

In *The Journal of Hygiene* for July (vol. xi., No. 2), among many papers of much scientific value, Mr. C. Walker describes experiments on the inoculation of "materies morbi" through the human skin by flea-bites. The results obtained indicate that there is very little risk of this occurring. Even with the plague bacillus and animals susceptible to infection with it, such as the rat and guinea-pig, the results were negative. The author suggests that this may be due to the fact that in his experiments the bites were usually single. In view of the accepted theory that plague is conveyed by fleas, these experiments are of considerable importance.

In *The Journal of Anatomy and Physiology* for July (vol. xlv., part iv.), Mr. E. S. Mawe directs attention to a curious method of predicting the sex of infants. It seems that there is an ancient Japanese belief that the sex can be predicted by the arrangement of the hair on the neck of the child born immediately before. It is said that when the hairs converge the next child is usually a girl, and when they diverge, a boy. Mr. Mawe gives the results of an examination of 300 cases, and they certainly appear to afford a good deal of support to this belief. He suggests that there may be some Mendelian interpretation, but it is not easy to see what Mendelism can have to do with it.

THE August number of *The Quarterly Journal of Microscopical Science* (vol. lvii., part i.) contains several very interesting memoirs, and the illustrations are of a remarkably high standard of excellence. Dr. W. E. Agar describes the spermatogenesis of *Lepidosiren*, and it is worthy of note that in order to carry out this work it was necessary for him to undertake an expedition to the swamps of the Paraguayan Chaco. It is satisfactory to observe that he is able to confirm the accounts given by workers on other types of the fairing of "homologous" chromosomes in the process of reduction, which is of such deep significance from the point of view of the theory of heredity. Mr. Geoffrey Smith has a short paper on the rapid increase in size of the hen's comb prior to each period of egg-laying, in which he shows that the method by which poultry keepers are in the habit of predicting when a hen is about to lay is really based upon a sound foundation. The temporary increase in size of the comb is shown to be due to infiltration of fat into its connective tissue core. Protozoology is well represented by an elaborate memoir on the cæcal parasites of fowls, by Mr. C. H. Martin and Miss Muriel Robertson, and comparative anatomy by a paper on the fresh-water medusa, *Limnoccnida tanganicae*, by Mr. C. L. Boulenger.

A PARLIAMENTARY return of the number of experiments performed on living animals during the year 1910 has recently been issued. The total number of experiments returned during 1910 for England and Scotland reaches the large total of 95,731. Of these, however, 90,792 are of the nature of inoculations, hypodermic injections, and other simple procedures; even the prick of a needle, or feeding with an entirely harmless material, if for the acquisition of new knowledge, is classed as an "experiment" under the Act. The inspectors report that they have everywhere found the animals suitably lodged and well cared for, and the licensees attentive to the requirements of the Act, as well as to the conditions appended to

their licences. Only two slight irregularities have occurred during the year.

"REPTILES OF ALL LANDS" is the title of a fully illustrated popular article communicated by Mr. R. L. Ditmars to *The National Geographic Magazine* for August. After mentioning that reptiles are now a degenerate group, although probably more numerous in species than formerly, the author gives a sketch of the three principal ordinal groups living at the present day. The gharial of the Ganges is regarded as the largest existing member of the whole class, Mr. Ditmars refusing apparently to recognise the enormous dimensions which have recently been attributed to the South American anaconda. According to his view, the largest known serpent is the Malay python, which attains a length of about 30 feet, or the same as that of the gharial. Mr. Ditmars, in the legend to the illustration on page 625, repeats the misstatement, to which we have previously directed attention, that the South American bushmaster is the only viperine snake which lays eggs.

ACCORDING to the local Press, a flying fish (*Exocoetus volitans*) was recently taken in a mackerel-net off the village of Wyke Regis, close to Weymouth. Its total length was 11½ inches. This appears to be the first definitely authenticated specimen taken on the British coast. A trigger-fish (*Balistes caprinus*) was also caught about the same time near Weymouth, this being the third Dorset example, the two others having been taken near the same place respectively in 1873 and 1905.

THE following method for the destruction of rats, adopted by M. de Kruyff, of the Agricultural Bureau of the Dutch Indies at Buitenzorg, Java, is given in a recent American consular report. All visible rat holes were first stopped with earth to ascertain which holes were inhabited. Half a teaspoonful of carbon bisulphide was poured in each of the holes found to be inhabited, and after a delay of a few seconds to allow the liquid to evaporate, the mixture of vapour and air was ignited. The result was a small explosion, which filled the hole with poisonous gases and killed all the rats almost instantly. A pound of bisulphide is sufficient for more than 200 rat holes; 131 dead rats were found in forty-three holes which were opened after the operation. It is further stated that satisfactory results in exterminating porcupines have been obtained by this method.

A CIRCULAR respecting the work of the Aberdeen University Bird-migration Inquiry has been issued by Prof. J. Arthur Thomson and Mr. A. L. Thomson. The object of the movement is the collection of more definite information on migration by the method of placing aluminium rings on the feet of a large number of birds, in the hope of hearing of the subsequent movements of some proportion of the birds. The rings are inscribed with the address "Aberdeen University," and a number (or number and letter combination) different in each case. The rings are placed on young birds found in the nest, or on any old ones that can be captured without injury. The following extracts are taken from the circular above-mentioned:—(1) It is particularly requested that all who may shoot, capture, or kill, or even hear of any of our marked birds, should let us know of the occurrence. As accurate particulars of date and locality as possible are desired, but, above all, the number (or number and letters) on the ring. Indeed, except where it has been possible to re-liberate the bird uninjured, the ring itself should always be sent, or the ring and foot, or even the whole bird. We always refund postage if asked to do so." (2) We invite the cooperation in the actual work of

marking of any who are specially interested, and have some knowledge of birds, and also time and opportunity for the work. The necessary rings, schedules, postage stamps, &c., are supplied by us, without charge, and we undertake to let the marker know of each case of a bird marked by him being recovered, and to let him have copies of printed reports as far as possible."

A VERY complete account is given by Dr. H. Wallner in the *Mitteilungen der k.k. Geographischen Gesellschaft* (No. 7, Band 54) of the Alm region of Lungau, in the eastern Alps. Where these Alpine pastures are suitably developed there is an annual migration of flocks and their herdsmen from the valley to the high slopes in the early summer, and a return downwards in the autumn, thus constituting a class of semi-nomadic communities as described by Ratzel. The general position of these pastures, their climatic and physiographic conditions, are carefully worked out, and on this basis the distribution of the scattered settlements, the ways and means of communication, the periodical movement of both men and animals, have been thoroughly investigated, not merely by way of description, but by that strictly quantitative method which is so essential for the scientific development of human geography.

DR. E. RÜBEL has compiled a very comprehensive ecological account of the highly interesting Bernina Valley and adjacent country, that is published in Engler's *Botanische Jahrbücher* (vol. xlvii., parts i. and ii.). Seven chapters deal with topography, climate, geology—contributed by Dr. E. Blösch—plant societies, vertical distribution, geography, and a comparison of the floras on the north and south slopes. No fewer than seventy-five plant associations are described under twenty-three formations, and these are grouped under the classes of woods, bushes, shrubs, grasses and swamps, water and rock formations. The most important trees are *Pinus Cembra* and *Larix decidua*, that grow either separately or mixed, as in the beautiful woods towards the lower end of the Roseg Valley. The shrubby and grass associations are perhaps the most interesting. The highest vertical range is that of the *Carex curvula* association, which ascends somewhat higher than 10,000 feet. A list of 100 species that grow above the snow limit is given; to *Silene exscapa* and *Ranunculus glacialis* is assigned the maximum limit of 3500 metres. The illustrations are numerous and excellent, while an interesting item is provided in the record of light measurements.

A COLLECTION of papers dealing with the fauna and flora of Boulder County, Colorado, is published in the University of Colorado Studies (vol. viii., No. 4). Prof. T. D. A. Cockerell contributes a catalogue of protozoa, including mycetozoa and arthropoda; as the author notes, it is remarkable that a preliminary list of mycetozoa from this semi-arid region should contain more than fifty species; *Badhamia*, *Physarum*, *Stemonitis*, and *Comatricha* are well represented. A description of the lodge-pole pine forests of Boulder Park is provided by Miss K. Bruderslin. The lodge-pole pine, *Pinus Murrayana*, produces the climax formation at an elevation varying between 9000 and 10,000 feet; aspen, Engelman spruce, and subalpine fir form local associations. Species of *Vaccinium*, roses, and *Arctostaphylos uva-ursi* are the prevailing shrubs.

THE annual report of the county surveyor of Kent, Mr. Maybury, shows the effect of the wear and tear of the roads of this county due to motor traffic, and the consequent increase of the cost of their maintenance. More than 800,000 gallons of tar were used last year on 371 miles

of road in Kent in painting the surface to prevent its disintegration. The report states that although this process has proved of very great service, and that the dust nuisance is now a thing of the past, yet on the most important roads where the commercial motor traffic is greatest, some more efficient means of preservation will have to be used than tar painting, and it may become necessary to cover the surface with granite macadam grouted with tar or pitch. As mentioned in a previous note, experiments are about to be conducted by the Road Board to ascertain the most effective method.

WORKS are now being carried out for the purpose of improving the harbour at Lagos, in South Africa. Owing to the dangerous and uncertain condition of the bar at the entrance to the harbour, it is impossible for ocean steamers to enter, and the whole of the traffic has to be transported to the steamers by means of surf boats, at a cost varying from five to thirteen shillings a ton. As the traffic is rapidly increasing, having risen from 154,000 tons in 1900 to more than 300,000 tons, this additional cost, besides the increased risk, is becoming a matter of very serious importance. In order to obtain safe access to the harbour, a mole is being constructed 10,000 feet long, which will project about 7000 feet beyond the present line of foreshore. This mole has a top width of 20 feet, with base of about 100 feet, and rises 9 feet 9 inches above low water, and is composed of granite rubble blocks. When this mole is completed further works are to be carried out on the other side of the entrance.

THE deterioration of stored coal and its liability to spontaneous combustion are questions of great practical importance, and have been the subject of numerous investigations in different countries. The University of Illinois Bulletin No. 46, which deals with the spontaneous combustion of coal, with special reference to bituminous coals of the Illinois type, by S. W. Parr and F. W. Kressmann, gives an account of an exhaustive set of experiments. It is shown that coal is continuously oxidised, a number of more or less distinct oxidation processes being involved. There is a certain critical temperature above which the oxidation is ultimately destructive. The effects of external sources of heat, state of division of the coal, presence of moisture and of iron pyrites are detailed, and a set of principles summarised, which must be observed in any attempt at the prevention of spontaneous combustion. The most important points are the avoidance of any external source of heat which may in any way contribute toward increasing the temperature of the coal, the elimination of coal dust or finely divided material, and dryness in storage. Storage under water would prevent both deterioration and spontaneous combustion, but its industrial practicability is still an open question, and can only be determined by actual experience. In a valuable appendix a historical review of the whole subject is given, together with a summary of the opinions of various workers on the same subject.

At the July meeting of the International Photometric Commission, held at Zürich, an important paper was communicated by Messrs. W. J. A. Butterfield, J. S. Haldane, and A. P. Trotter on the corrections for the effects of atmospheric conditions on photometric flame standards. It is known that the light given by the standard flame (Harcourt pentane lamp or Hefner amylacetate lamp) depends upon the atmospheric pressure, the humidity, and the amount of carbon dioxide present. In these experiments a special steel compression chamber was fitted up in such a manner that one of these variables could be altered the other two being kept constant, the correspond-

ing changes in the illuminating power of the flame being balanced against an electric lamp worked under constant conditions. The results are summarised in two formulæ, for the Harcourt and Hefner lamps respectively, showing the actual light of the lamp, expressed in terms of the light under normal conditions, the pressure, and the existing percentages of carbon dioxide and aqueous vapour in the air. A few experiments were also carried out on the effect of variations in the atmospheric conditions on the light of gas and candle flames. It was found that the changes were in the same direction, and approximately of the same order, as those of the Harcourt standard, and the conclusion is drawn that small variations in the atmospheric conditions of a gas testing room will not appreciably affect the results of photometric comparisons in which the Harcourt or Hefner lamp is used as the standard of light, and that these standards will give as accurate results as are anyhow practically obtainable in determinations of the illuminating power of gas, if they are used in all ordinary circumstances without correction for any divergence from normal atmospheric conditions.

WITH reference to a statement to be found in our issue of May 25 (p. 412) in a review of "Salvarsan or 606 (Dioxy-Diamino-Arsenobenzol): its Chemistry, Pharmacy, and Therapeutics," by Dr. W. H. Martindale and W. W. Westcott, in which trypan red is named as a remedy for bovine piroplasmiasis (Texas fever), a correspondent resident in Australia has written to ask where the drug can be obtained, its price, and any literature concerning it. In reply, we would point out that the reference to "trypan red" was made in error (see correction on p. 526 of NATURE for June 15); the drug for the treatment of piroplasmiasis is "trypan blue," particulars as to the cost of which can probably be obtained from such a firm as E. Merck, 16 Jewry Street, London, E.C. The remedy is discussed by Nuttall and Hadwen in *Parasitology* for 1909. We are informed that large doses of quinine have also been found to exert a curative action on bovine piroplasmiasis in Malaya and Guatemala.

OUR ASTRONOMICAL COLUMN.

THE SPECTRUM OF KIESS'S COMET.—With spectrographs attached to the equatorial of the Juvisy Observatory, MM. de la Baume Pluvinel and Baldet secured photographs of the spectrum of comet 1911b, which they discuss in a paper published in No. 8 of the *Comptes rendus* (August 21). On their best photograph, the two bright bands at λ 4735 and λ 3882 are accompanied by many fainter bands, which present one or two noteworthy features. Three feeble condensations at $\lambda\lambda$ 3914, 4005, and 4026 are apparently only in the tail; they probably correspond with the λ 3914 of the cathode spectrum of nitrogen and with the doublet (λ 4003 and λ 4023) given by Fowler. While agreeing with the majority of cometary spectra, that of comet 1911b is different in many respects from those of several recent comets. For instance, the great comet 1910a showed a most intense continuous spectrum, of which there is very little in the radiations from the Kiess comet. Again, in Morehouse's comet the doublets traced by Fowler were common to the nucleus and the tail; here they are peculiar to the tail. To explain this, the authors suggest that in the former case the decomposition of the cyanogen was very active, and so one got the products of the decomposition surrounding the nucleus; but in the case of comet 1911b the activity was not so great, and the cyanogen was not sufficiently decomposed until it had been repelled from the nucleus into the tail.

THE ZODIACAL LIGHT.—In No. 4520 of the *Astronomische Nachrichten* Herr Josef Sedláček describes the Zodiacal Light as observed at the Neuschloss in Steiermark Observatory during January and February. At 7h. 15m. (M.E.T.) on January 18 the light was about twice as bright as the

brightest part of the Milky Way, and the cone reached up some 49.5° from the horizon; its colour was reddish. On other nights it was noted that the brightness of the light fluctuated considerably with intervals of 1.0 to 1.5 minutes.

METEORITE FINDS.—Publication 145 of the Field Museum of Natural History is devoted to a description, by Mr. O. C. Farrington, of some recent additions of meteorites to the museum of which he is curator.

The Leighton meteorite is a stone weighing about 30 oz. and having a length of 4 inches; it has a very marked brecciated appearance, and contains small grains of nickel-iron. This stone fell on January 12, 1907, at a place eight miles south of Leighton, Colbert County, Alabama.

The Quinn Canyon meteorite, found in August, 1908, in Nevada, is a much larger specimen, and is one of the large iron meteorites of the world. The longest diameter of its oval face is 47 inches, with a diameter at right angles to this of 35 inches, and a circumference of 132 inches; its weight is 3275 lb. In addition to numerous knobs, pittings, furrows, and cylindrical holes all over the iron, the bottom of the meteorite shows two patches of crust of black magnetic iron oxide. These patches are each about 1 inch square, and the oxide adheres so firmly that it can only be detached by the use of a cold chisel and hammer. An analysis shows that the meteorite contains about 91.6 per cent. of iron and about 7.3 per cent. of nickel, and very fine etching figures have been produced. It is supposed to have fallen in a recorded fall which occurred on February 1, 1894.

Mr. Farrington also gives an interesting list of recorded falls since the year 1800, and accepts 331 as properly authenticated. He also analyses the records in months, and finds that May and June show the greatest numbers of falls; November falls below, and August slightly exceeds, the average number. He also gives a complete list of the known falls that have taken place in the United States, with brief particulars of each.

THE LEEDS ASTRONOMICAL SOCIETY.—No. 18 of the Journal and Transactions of the Leeds Astronomical Society contains the report for the year 1910, and also some of the papers read during the session. Of these, several deal with comets; and there is an interesting paper by Mr. Whitmell dealing with lunar eclipses, in which historical eclipses and various features producing and attending eclipses are lucidly described.

AN OPEN-AIR TELESCOPE.—A project for a large, long-focus telescope is described by Prof. Todd in No. 187, vol. xxxii., of *The American Journal of Science*. In order to obtain great size at relatively low cost, Prof. Todd proposes to do away with the costly dome and use the telescope in the open air. At present he describes an altazimuth mounting in which the azimuth motion would be secured by a revolving vertical shaft working on rollers. To secure the easy working of this he proposes to take up most of the weight by flotation with an arrangement whereby the telescope could be clamped in a "safe" position, when not in use, by pumping out part of the supporting liquid. The tube would be built on the cantilever principle, of angle steel, and would be supported in the middle. He estimates that a 60-inch objective would cost about 125,000 dollars, and such a mounting as is proposed would probably cost a like amount. Instead of observing chair, rising floor, &c., he proposes to carry the observer in a light carriage attached to the revolving tailpiece of the telescope, and he discusses the practicability of erecting such an instrument at some such altitude as that of Fuji-yama in Japan (12,400 feet).

LUMINOUS METEOR TRAINS.—Some further work on the origin of luminous and persistent meteor trains is described by Dr. Trowbridge in *The Popular Science Monthly* for August. Dr. Trowbridge has been able to reproduce the phenomena by causing gases at very low pressure to phosphoresce, and he suggests that in the upper air, generally at about fifty or sixty miles' altitude, the conditions are favourable for this action, the phosphorescence being produced by ionisation caused by weak electric currents or intense temperature generated by the meteor's flight.

THE OXFORD UNIVERSITY OBSERVATORY.—Further evidence as to the energy and versatility characteristic of the Oxford University Observatory is forthcoming in the